New Paragraph added to the specification (3/6/02)

Related Application

This application is a continuation of co-pending application Serial No. 08/856,051 filed on May 14, 1997.

Clean set of claims as pending (3/6/02)

9. In a client-server network, a system for transmitting data associated with an application program to a plurality of client nodes, comprising:

a server node executing an application program in response to a request from a first client node to execute the application program;

a first connection between the server node and the first client node established in response to the request, the first connection including a first protocol stack on the server node for directing communications between the application program and the first client node;

a second connection between the server node and a second client node established in response to a request from the second client node to access the application program, the second connection including a second protocol stack on the server node associated with the first protocol stack; and

a multiplexer in communication with each connection and the application program executing on the server node,

wherein the multiplexer substantially simultaneously transmits application data associated with the application program to the first and second protocol stacks.

10. The system of claim 9 wherein the application data transmitted to the second protocol stack includes a copy of the application data transmitted to the first protocol stack.

11. The system of claim 9 wherein the second connection further comprises a third protocol stack on the server node in communication with the second protocol stack, and a fourth protocol stack on the server node in communication with the third protocol stack.

12. The system of claim 9 wherein the server node further comprises an execution environment in which to execute the application program, the execution environment concurrently communicating with the first protocol stack and each protocol stack associated with the first protocol stack.

13. The system of claim 9 wherein each protocol stack includes a set of protocol modules and the set of protocol modules in the second protocol stack differs from the set of protocol modules in the first protocol stack.

14. The system of claim 9 wherein the server node is a first server node, and further comprising a second server node in communication with the first server node and the first client node, and wherein the first connection between the first client node and the first server node is through the second server node.

15. A method for communicating between an application program executing on a server node and a plurality of client nodes, the method comprising the steps of:

executing an application program on the server node in response to a request from a first client node to execute the application program;

establishing a first connection between the first client node and the server node in response to the request using a first protocol stack on the server node;

establishing a second connection between a second client node and the server node using a second protocol stack on the server node in response to a request from the second client node to access the application program;

substantially simultaneously transmitting application data associated with the application program through the first and second connections to the first and second client nodes, respectively.

16. The method of claim 15 further comprising the steps of:

transmitting input data through one of the connections from one of the client nodes to the application program executing on the server node; and

transmitting the input data to the other client node through the other connection.

17 The method of claim 15 wherein the application data transmitted through the second connection includes a copy of the application data transmitted to the first connection.

18. The method of claim 15 further comprising the steps of:

generating a third protocol stack on the server node in communication with the second protocol stack; and

generating a fourth protocol stack on the server node in communication with the third protocol stack and the second client node,

wherein the second connection includes the third and fourth protocol stacks.

19. The method of claim 15 further comprising the steps of:

providing an execution environment on the server node within which to execute the application program; and

associating the execution environment with the first and second protocol stacks.

20. The method of claim 15 wherein the application program is a first application program and the second connection includes a third protocol stack on the server node, and further comprising the steps of:

executing a second application program on the server node in response to a request from the second client node to execute the second application program;

associating an execution environment for executing the second application program with the third protocol stack;

transmitting application data associated with execution of the first application program through the second and third protocol stacks of the second connection; and

transmitting application data associated with execution of the second application program through the third protocol stack.

21. The method of claim 15 further comprising the steps of:

generating a new protocol stack for each additional client node requesting access to the application program executing on the server node;

associating each new protocol stack with the first protocol stack;

establishing for each new protocol stack a new connection between the application program executing on the server node and the additional client node associated with that new protocol stack; and

substantially simultaneously transmitting application data associated with the application program through each new connection to each additional client node.